USSR

KARAYEV, S. F. and GUSEYNOV, D. YA., Azerbaydzhanskiy Meditsinskiy Zhurnal, No 7, 1972, pp 69-72

dose level (100--180 mg/kg) which indicates the absence of selectivity for any one particular type of action. That ester in terms of its activity (IV) is inferior in that respect to the dialkylamino derivatives of dibutyneoxyethane.

Conclusion

Investigation of the dialkylamino derivatives of dibutyneoxyethane and propargyl butyl xanthogenate has permitted us to establish in those compounds the presence of a moderate sedative action, combined with a myorelaxant effect with weak tranquilizing and antispasmodic properties.

The compounds studied are of specific interest in the theoretical sense since they expand our concept of the psychotropic activity in those series.

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KARAYEV, S. F. and GUSEYNOV, D. YA., Azerbaydzhanskiy Meditsinskiy Zhurnal, No 7, 1972, pp 69-72

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USSR

UDC 621.396.932.1

GUSEYNOV, N. S.

"Statistical Characteristics of Angular Functions in Taking a Bearing on Extended Objects"

Tr. Mosk. energ. in-ta (Transactions of the Moscow Power Institute) No 117, 1972, pp 87-94 (from RZh--Radiotekhnika, No. 10, 1972, Abstract No 10G60)

Translation: The spectrum of angular fluctuations in probing an extended object with periodic sequences of radio pulses is determined. It is shown that the nature of the spectrum depends primarily on the pulse repetition rate; with a reduction of the latter, the discontinuity of the spectrum is reduced. The form of the spectrum and the level of the spectral density are also determined by the width of the Doppler spectrum of the reflected signal. The intensity of the angular fluctuations is proportional to the square of the angular dimension of the reflecting object in the plane of the bearing. Three illustrations, bibliography of three. N. S.

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Molecular Biology

USSR

UDC 575

MEKSHENKOV, N. I., and GUSEYNOV, R. D., Institute of General Genetics, Academy of Sciences USSR, Moscow

"Interrupted Transfer of T4B Phage Chromosomes into Cells, Cyclic Permutation of Genes, and Infective Activity of Fragmented Genomes"

Moscow, Molekulyarnaya Biologiya, Vol 5, No 3, May/Jun 71, pp 444-452

Abstract: At low incubation temperatures (9-20°C), the rate at which molecules of phage DNA are transferred into cells considerably decreases. With a brief treatment in a mixer (14,000 RPM, 40 sec), it is possible to interrupt the DNA transfer at a stage when only a portion of the phage genome has entered the cell. Several DNA fragments introduced into the cell by various phages are jointly able to develop infection and to form mature particles. This proves that: 1) different T4r+ phages simultaneously introduce, into the cell, separate DNA fragments with various sets of genes and that there fore cyclic gene permutations must take place in the chromosomes of these phages; and 2) artificially fragmented genomes possess the ability to induce infections.

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PROOF OF CYCLIC GENE REARRANGEMENTS IN THE CHROMOSOMES OF PHAGE T4R PRIME POSITIVE -U-

AUTHOR-(02)-MEKSHENKOV, M.I., GUSEYNOV, R.D.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK, SSSR 1970, 19(2), 457-60

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, PHOSPHORUS ISOTOPE, CHEMICAL LABELLING, PHAGE, GENE, CHROMOSOME, DNA, BACTERIAL GENETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0744 STEP NO--UR/0020/70/191/002/0457/0460

CIRC ACCESSION NO--AT0132846

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AT0132846
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ESCHERICHIA COLI CULTURES AND PHAGE T4R PRIME POSITIVE LACKING IN TRYPTOPHAN WERE USED IN THE TITLE STUDY, APPLIED TO PRIME32 P TAGGED PHAGE. ENTRY OF PRIME 32 P INTO THE CELLS BEGINS WITHIN MIN OF CONTACT OF THE PHAGE WITH THE BACTERIA AND INCREASES LINEARLY WITH TIME; AT 7DEGREES THIS CEASES IN SIMILAR TO 18 MIN, WHEN A SHARP INCREASE IS NOTED IN RESISTANCE OF THE COMPLEXES TO DECOMPN. IN A MECH. BLENDER. IF INJECTION OF DNA IS INTERRUPTED IN SMALLER THAN 18 MIN, THEN EACH PHAGE PARTICLE SUCCEEDS IN INTRODUCING INTO THE CELL ONLY A PART OF ITS GENOME, AND THE INFECTIVE CENTER IS NOT ESTABLISHED. AT LOW TEMP., THE RATE OF TRANSFER OF PHAGE DNA INTO THE CELL IS REDUCED, WITH CONSEQUENT PARTICAL GENOME INTRODUCTION.
FACILITY: INST. OBSHCH. GENET., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.14.018.298'24'25:621.17

GUSEYNOV, R. K., and ZIKEYEV, V. N., Central Scientific Research Institute of Ferrous Metallurgy

"Medium-Carbon Structural Steels with Increased Strength and Ductility, Alloyed with 9% Ni and 4% Co"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 49-54

Abstract: The strength properties of steel NR9-4-X (Soviet designation), developed and patented by the Republic Steel Corp., containing 9% Ni, 4% Co, and X% C (where X is the carbon content in hundredths of a percent) were studied for their applications under conditions of complex-stress state, dynamic loads, and low and cryogenic temperatures. This steel has good tensile and impact strength properties which equal or surpass 18-8 maraging steels. For carbon contents between 0.25 and 0.40%, both tensile and yield strengths are directly proportional to carbon content (strengths increase with increased carbon content). Impact strength drops slowly with increased carbon content. The recommended heat treatments are given for grades NR9-4-25, NR9-4-30 and NR9-4-45 with tables and graphs showing the temperatures at which bainite is formed and the change of impact strength resulting from the formation of tempered martensite and

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GUSEYNOV, R. K., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 49-54

bainite. The best method of producing this steel is vacuum-degassing in the ladle or vacuum-arc remelting using carbon as the deoxidizing agent rather than aluminum and silicon. Eleven figures, six tables, 25 bibliographic references.

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USSR

UDC 620.17:669.14.018.6

GULYAYEV, A. P., ZIKEYEV, V. N., and GUSEYNOV, R. K., Central Scientific Research Institute of Ferrous Metallurgy

"Mechanical Properties of Different High-Strength Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 38-41

Abstract: The advantages of medium-carbon structural steel 30N9K4 (4.3% Co) were studied and its properties compared to other steels. Comparisons were made by heat treating the steel under study and steels 28Kh3SNMVFA and N18K8M3T to a tensile strength of 165 kgf/mm^2 (the heat treatment being different for each steel), heat treating steels 30N9K4, 18Kh2N4VA, and 28Kh3SNMVFA to maximum strength, and heat-treating steels 30N9K4, 38KhN3MA, and 40KhNMA to a tensile strength of 95 kgf/mm^2. Of particular interest was determining if steel 30N9K4 possessed the best combination of tensile strength and impact strength. For the given tensile strengths, steel 30N9K4 had the best impact strength of the steels heat treated to maximum strength, the best impact strength, between -180 and -80° C, of the steels heat treated to 165 kgf/mm^2, but was surpassed by steel 18Kh2N4VA when heat treated to 95 kgf/mm^2. One figure, two tables, ten bibliographic references.

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Phytology

USSR UDC: 582.288.581.19

GUSEYNOV, V. A. and RUNOV, V. I., Microbiology Division, Academy of Sciences Uzbek SSR

"Some Characteristics of Nucleic Acids in Verticillium Fungi"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 1, 1971, pp 20-22

Abstract: Differences in nucleic acid content and nucleotide composition (guanine, cytosine, adenine, thymine) of DNA in pathogenic fungus (V. dahliae Kleb.) and nonpthogenic fungus (V. lateritium Berkel) were studied. Determination of DNA and RNA in mycelia by the Zsanev and Markov method and determination of nucleotide composition according to the Vanyushin method showed that in V. dahliae, a slow increase in DNA and a fast increase in RNA take place within 10-14 days. In addition, RNA content decreased by the 20th day, while the DNA content remained unchanged. In the case of V. lateritium, no change was observed in DNA content with aging of the culture, whereas the RNA content was slightly larger than in V. dahliae. Nevertheless, the character of the change in RNA content was the same for both fungi. In DNA of V. dahliae, guanine and cytosine are predominant, while all nucleotides exist in equimolar quantities in the DNA of V. lateritium. The ratio of purines to pyrimidines in DNA of both fungal species is close to one.

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USSR UDC 547.558.1

AKHMEDZADE, D. A., YASNOPOL'SKIY, V. D., and GUSEYNOVA, M. M.

"Synthesis of Some α-Thienylphosphinite Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1701-1702

Abstract: A series of new α-thienylphosphinous acid esters was obtained by the reaction of α-thienyldichlorophosphine with phenol and alkylphenols.

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GUSEYNOVA, S. G.

UDC: 611.41.014.477-063-019

THE EFFECT OF ACCELERATOR TRAINING ON SPLENIC RETICULAR TISSUE

[Article by S.G. Guseynova, Chair of Normal Anatomy, Petrozavodsk State University imeni O.V. Kuusinen (head of chair: Professor A.G. Fedorova, Doctor of Medical Science); Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 20 June 1970, pp 70-74]

Organs that pool blood present the greatest hemodynamic changes under gravitational stress. They include the spleen. The architectonics of reticular tissue and capacity of the venous bed of the spleen in acute experiments with single exposures to such stress are markedly altered and related to the magnitude and direction of the G forces (S.G. Guseynova, 1966, 1969). The present work was performed on the Chair of Normal Anatomy, First Leningrad Medical Institute imeni Academician I.P. Pavlov.

The objective of this work was to investigate the reticular base of the spleen following exposure to prolonged gravitational stress for training purposes.

The object of investigation consisted of 50 male rats (10 of which were controls). The animals were exposed to gravitation stress in the form of rotation on a centrifuge. They were placed in metal cages where they could exercise without altering the longitudinal body axis in relation to the G force axis. Forces of 2-10 units (lasting 2-4 minutes each) were used for two weeks in the head-pelvis, pelvis-head (longitudinal forces), and chest-back, back-chest (transverse forces). The animals were sacrificed immediately after the experiment was over. Autopsy revealed reduction of all dimensions of the spleen. Histological examination of the spleen was made by the method of silver nitrate impregnation of sections according to Foot.

In control rats, the red pulp revealed an even large-loop network of medium thick reticular fibers. The fibers went in different directions in the network and formed meshes resembling bee hives (Figure 1, a). In the malpighian bodies around the central arteries there was a large, distinct, continuous network. The fibers of the capsule and trabeculae are thick, straight, and

UDC 0-96

USSR

ALESKEROV, A. S., EFENDIYEV, S. S., and GUSEYNOVA, S. M.

"Changes in Relation to the Season of the Year in the Amount of Antibiotic- and Sulfanilamide-Resistant Conditionally Pathogenic Microorganisms Isolated From Sea Water"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Biologicheskikh Nauk, No 3, 1971, pp 123-126

Abstract: Seasonal changes in the amount of antibiotic- and sulfanilamide-resistant conditionally pathogenic and pathogenic microorganisms (E. coli, Bact. paracoli, Proteus vulgaris, Ps. aeruginosa, and Staph. aureus) isolated from the water of Baku Bay, the sea water of Apsheron beaches, and the sewage effluent released into the sea were studied. It was established that as a result of the injudicious use of antibiotics and sulfa drugs in large amounts, pathogenic and conditionally pathogenic microorganisms had developed resistance. Staph. aureus isolated from sea water was highly sensitive to penicillin, tetracycline, leyomycetin, and sulfanilamide drugs. The amount of resistant conditionally pathogenic microorganisms isolated from Apsheron sea water was highest in the summer. The condition which develops in this respect in the summer is an epidemiological hazard.

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Acc. Nr. AP0046180 Abstracting Service: CHEMICAL ABST 5/70 Ref. Code 21R0065

91907b **Alkaline removal of sulfur compounds and carbon dioxide from pyrolysis gas.** Guseinova, Z. D.; Kostin, V. V.; Savel'ev, Yu. V.; Sarkisyants, G. T. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 31–2 (Russ). Pyrolysis gas contg. H 10.0, CH_4 25.2, C_2H_4 25.0, propylene 18.0, C_3H_8 2.4, C_4 and higher hydrocarbons 9.0%, H_2S ≦1500, org. S compds. 20 mg/m³, and CO_2 300 ppm was fed into a tray column 7 m high and 378 mm in diam. having 10 perforated trays. H_2S and part of the CO_2 were removed with 1.4–1.7 l. 2–4% NaOH soln./m³ at 40°. After leaving the top of the column, the gas was heated to 80° and fed into a similar packed column for complete removal of H_2S and CO_2 with 10 l. 5–8% NaOH soln./hr at 60–80°. The alk. solns. were changed after operating 1300–1500 hr. After purification, the pyrolysis gas was cooled and C_4 and higher hydrocarbons were sepd. The amts. of CO_2, H_2S, and org. S compds. were reduced to 6 ppm, traces, and 0.6 mg S/m³, resp. On decreasing the amt. of circulating alk. soln. to 0.7 l./m³ gas, the amts. of CO_2, H_2S, and org. S compds. were decreased to 18 ppm, 0.1 mg/m³, and 1.6 mg S/m³, resp. The polymn. was greatly decreased, excluding periodic cleaning of the app. The process is shown graphically.

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REEL/FRAME
19781257

UDC 547.96:576.3/:576.858.5

USSR

DYACHENKO, N. S., NOSACH, L. N., VANTSAK, N. P., and GUSHCHA, K. P., Institute of Microbiology and Virology, Academy of Sciences UkSSR

"Intensity of Protein Accumulation in the Dynamics of Formation of Intranuclear Inclusions in Cells Infected With Type I Adenovirus"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 4, Jul/Aug 71, pp 478-483

Abstract: The accumulation of protein in nuclei and cytoplasm of KB cells infected with type I adenovirus was investigated cytophotometrically according to Mazia. Cells with inclusions of the following types in the nucleus (corresponding to types II-VI of DNA-containing inclusions) were subjected to cytophotometric study: 1) fine-grained, 2) granular, 3) coarse-grained inclusions, 4) unformed central corpuscle, 5) formed central corpuscle. Accumulation of protein continued only in stage 1. In stages 2-5 the amount of protein in the nucleus remained constant. Its amount in the cytoplasm decreased in stages 2-4 to a level corresponding to that for uninfected controls, while it increased in stage 5. The results indicated that the accumulation of protein, which began in the nuclei and cytoplasm before any changes in the cells were discernible upon staining according to Mazia, was completed in stage 1. One may assume that in stages 2-5 the

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USSR

UDC: 576.858.5:612.015.33

DYACHENKO, N. S., NOSACH, L. N., GUSHCHA, K. P., and VANTSAK, N. P., Department of Viral Biophysics, Institute of Microbiology and Virology of the Academy of Sciences Ukrainian SSR, Kiev

"Cytophotometric Study of the Degree of Protein Accumulation in Cells Infected With Type 1 Adenovirus"

Leningrad, Tsitologiya, Vol 13, No 2, Feb 71, pp 252-256

Abstract: The sequence of stages in the development of type 1 adenovirus and the formation of intranuclear inclusions was studied in connection with a proposed mechanism for the action of adenovirus on a sensitive cell. The accumulation of proteins in cells and cytoplasm of normal and infected KB cells was studied by use of preparations stained with bromophenol blue sublimate. Statistically reliable values of the mean concentration of protein in the cytoplasm and nuclei of infected cells were observed 18 and 24 hours, respectively, after infection. This process occurs together with the replication of the infected virus and with synthesis of the sensitizing antigen. The protein accumulation is accompanied by the formation of finely divided inclusions. At later stages in the development of these inclusions, the protein contents of the nuclei remain the same, whereas those of the cytoplasm are reduced to control level.
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USSR

DYACHENKO, N. S., et al, Tsitologiya, Vol 13, No 2, Feb 71, pp 252-258

Cells containing formed nuclear bodies represent an exception: a considerable increase in the protein contents is observed in them. The data obtained indicate that the inclusions have a different function in the replication of adenovirus and in cellular metabolism at different stages of formation.

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USSR

UDC 576.858.5

NOSACH, L. M., DYACHENKO, N. S., GUSHCHA, K. P., and VANTSAK, N. P., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Cytofluorometric Study of the Synthesis of Structural Proteins in Type 1 Adenovirus"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 463-466

Abstract: A cytofluorometric study was made of protein synthesis in type-1 adenovirus. Certain patterns were observed in the nature of the distribution and dynamics of accumulation of structural antigens. The intensity of luminescence of the hexone and peptone antigens increased markedly 16 and 19 hours after infection, respectively, reaching a peak 22 hours after infection.

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USSR

UDC: 539.4

GUSHCHA, O. I., LEBEDEV, V. K., GUZ', A. N., MAKHORT, F. G., Kiev

"Some Results of the Application of the Ultrasonic Nondestructive Method of Measurement of Residual Stresses"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 71-73.

Abstract: A method of nondestructive measurement of biaxial residual stresses is described, based on the regularities of propagation of ultrasonic waves in solids. The results of its practical application to the analysis of stresses in specimens and structural elements in the laboratory, as well as measurement of residual stresses in existing structures at aluminum plants are presented.

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USSR

UDC 539.3

GUZ', A. N., MAKHORT, F. G., GUSHCHA, O. I., LEBEDEV, V. K., Institute of Mechanics, Academy of Sciences, Ukrainian SSR, Institute of Electric Welding, Academy of Sciences, Ukrainian SSR (Kiev)

"On the Theory of Wave Propagation in an Elastic Isotropic Body With Initial Deformations"

Kiev, Prikladnaya Mekhanika, Vol 6, No 12, Dec 1970, pp 42-49

Abstract: The influence of initial deformations upon the propagation velocity of elastic waves in an isotropic body is studied within the framework of the theory of finite initial deformations and several variants of the theory of small initial deformations in terms of Lagrange coordinates, with the use of Green's deformation tensor. Proof is given of the conditions that must be satisfied by the form of the elastic potential in order to explain the experimentally obtained rules. Research results for organic glass are presented. The values of second-and third-order elastic constants for organic glass are computed. 2 figures, 1/1 15 bibliographic entries.

USSR UDC: 681.3

GUSHCHENSKOV, V. N., ZHAVRID, L. M., KAZUSHCHIK, V. A., KOSAREV, Yu. G., SAVIK, N. P.

"Updating the Command System of the 'Minsk-222' Computer System"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 42, Novosibirsk, 1970, pp 74-80 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V548)

[No abstract]

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USSR UDC 576.858.25.083.35.086.3

GUSHCHIN, B. V., TSILINSKIY, Ya. Ya., SHUSHKOV, L. S., L'VOV, D. K., and KLIMENKO, S. M., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Electron Microscopic Investigations of Vero Cells Infected With Genetically Homogenous and Heterogenous Venezuelan Equine Encephalitis Virus (VEE)"

Moscow, Voprosy Virusologii, No 4, 1973, pp 436-438

Abstract: Vero cells grown in medium 199 with 10% normal bovine serum were infected with clones 6 and 8 of VEE either separately, or with both clones at the same time. Electron microscopy of thin sections showed that 17 and 23 h after infection either with clone 6 or 8 alone mononucleoid virions were formed, whereas infection with both clones simultaneously yielded mononucleoid virions as well as giant virions containing several nucleoids (polynucleid virions). After 29 and 41 h an additional type of giant viral particle was formed which contained material equal in density to that of the nucleoids (termed giant viral particles in distinction to polynucleoid virions) in cultures infected with both clones. Cells infected with only one type of VEE clone did not form giant viral particles. The data support the contention that formation of giant virions represents infection of the cells with genetically heterogenous VEE virus.

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USSR

UDC 576.858.25

TSILINSKIY, Ya. Ya., GUSHCHIN, B. V., KLIMENKO, S. M., and L'VOV, D. K., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Relationship Between the Biological Properties of Venezuelan Equine Encephalomyelitis Virus and Virus Particle Size"

Moscow, Voprosy Virusologii, No 5, 1971, pp 573-576

Abstract: Natural genotypes of Venezuelan equine encephalomyelitis virus exhibited a correlation between the size of the virus particles and the size of the plaques, the size of the viruses evidently affecting plaque size because particles of different sizes diffused through agar at different rates. Hence clones with small virus particles formed larger plaques than did clones with large virus particles. The thermostability of the virus, its pathogenicity for white mice, and capacity for replication at 40°C were independent of the size of the virus particles. Clones with relatively small or medium-sized virus particles combined the capacity for autointerference in chick fibroblast cultures with sensitivity to inhibition by agar polysaccharides. These patterns did not apply to the temperature mutants of VEE virus. They formed small or very small plaques, although

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110002-2"

USSR

TSILINSKIY, Ya. Ya., et al., Voprosy Virusologii, No 5, 1971, pp 573-576

they were characterized by small virus particles. Apparently the size of the plaques in these mutants, which are incapable of replicating at 40°C and are nonpathogenic for white mice, is determined not by the rate of diffusion of the virus particles in agar but by some other factors. 5-Fluorouracil treatment caused the large-plaque and thermostable variant of VEE virus to mutate toward smaller plaque size and inability to withstand heating to 60°C.

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1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE EFFECT OF PINOCYANOLE OF T SUB2 AND C SUBD BACTERIOPHAGES -U-

AUTHOR-(03)-VELIKODVORSKAYA, G.A., GUSHCHIN, B.V., KLIMENKO, S.M.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 204-207

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIOPHAGE, BIOLOGIC STRAIN, BACTERIAL DEOXYRIBONUCLEIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0734 STEP NO--UR/0402/70/000/002/0204/0207

CIRC ACCESSION NO--AP0108940
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0108940
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERACTION OF A STAIN OF THE CYANINE SERIES, PINOCYANOLE, WITH T SUB2 AND C SUB0 BACTERIOPHAGES WAS STUDIED. PNC WAS FOUND TO PENETRATE WELL THROUGH THE ENVELOPE OF INTACT PHAGE PARTICLES AND TO INERACT WITH INTRAPHAGE DNA. MORPHOLOGICAL CHANGES OF PHAGES WERE VERY SLIGHT. THE INFECTIOUS ACTIVITY OF C SUB0 PHAGE UNDER THE INFLUENCE OF PNC WAS REDUCED BY 35PERCENT, THAT OF T SUB2 PHAGE BY 25PERCENT.

UNCLASSIFIED

USSR UDC 533.6.01.5

BONDAREV, YE. N., and GUSHCHIN, G. A.

"Three-Dimensional Interaction of Jets Diffusing in a Concurrent Supersonic Stream"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6, Nov-Dec 72, pp 88-93

Abstract: A numerical method is developed for the calculation of a three-dimensional laminar supersonic unexpanded jet discharging into a concurrent supersonic stream. Simplified Navier-Stokes equations are used for representing steady-state flow. Numerical calculations of several cases of the discharging of jets from a four-nozzle unit into a concurrent supersonic stream are conducted, and some features of such three-dimensional flow are ascertained. 7 figures, 4 references.

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Acc. Nr.: AP0031631 Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 3-6

THE EFFECT OF MICROELECTROPHORETIC INJECTION OF MEDIATORS ON THE SINGLE CELLS OF AN ISOLATED ATRIUM IN GUINEA PIGS

Gushchin, I.S.

Allergological Research Laboratory of the AMS of the USSR, Moscow

The effect of microphoretically injected epinephrine, histamine and acetylcholine (from 2 M solutions) on the electric activity of single fibers in an isolated right atrium, registered intracellularily, was studied with the aid of double-barrel coaxial micro-electrodes. Epinephrine produced acceleration of spontaneous action potentials of the fibers of the pace-maker's type with a latent period of about 5 sec. but did not modify the shape and frequency of spontaneous action potentials of the contractile fibers. Histamine application to the pace-makers and contractile fibers did not affect the nature of electric activity in these cells. Application of acetylcholine to the contractile fibers evoked shortening of the phase of spontaneous action potentials repolarization with a latent period of 3.94±0.34 sec. Preliminary addition to the atria of epinephrine (1 microgram/ml) did not change the duration of the latent period of the acetylcholine effect on the contractile fibers. Atropine (0.1, 1.0, 2.0 µ/ml) lengthened the latent period of the acetylcholine effect on the contractile fibers of the atrium.

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USSR

UDC 576.354.46

GUSHCHIN, I. S., KOZHECHKIN, S. N., and SVERDLOV, Yu. S., Scientific-Research Allergological Laboratory, Academy of Medical Sciences USSR.

"Concerning the Presynaptic Nature of the Suppression of Postsynaptic Inhibition by Tetanus Toxin"

Moscow, Doklady Akademii Nauk SSSR, Vol 187, No 3, pp 685-688

Abstract: Cats 2-4 kilograms in weight were used in the experiments conducted to determine the effect of glycine on the postsynaptic membrane of spinal motoneurons in which the generation of inhibiting postsynaptic potentials was suppressed by a tetanus toxin. The animals were given 1,500-2,000 mouse LD_{50} of dry tetanus toxin in 0.5 milliliters of physiological solution. Within 40 hours after the infection the lumbosacral expansion of the spinal cord under nembutal anesthesia was laid bare, and the left anterior roots of segments L_6--S_2 were cut intradurally. The spinal cord was cut at the level of the last rib. A number of cutaneous and muscle nerves of the left posterior extremity were prepared for the purpose of excitation. Coaxial electrodes

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were applied, with the internal core filled with 0.6 molar K_2SO_4 to draw off the intracellular potentials. The outer core was filled with a solution of glycine for electrophoretic injection in the area of the outer surface of the membrane of the punctured motoneuron. To reduce glycine diffusion in the period between injections a reverse current was passed through the glycine-containing electrode. The motoneurons were identified by the antidromal action potentials in response to the stimulation of the anterior root of the corresponding segment. It was considered that a motoneuron is a part of the muscle the impulses of which induce the development of monosynaptic stimuli of postsynaptic potentials. The data obtained fully prove that the spinal cord motoneurons in which the generation of inhibiting postsynaptic potentials is completely blocked by the tetanus toxin retain their sensitivity to the inhibiting action of glycine, the probable transmitter of postsynaptic inhibition; this confirms the hypothesis according to which the postsynaptic potentials are inhibited because tetanus toxin prevents the release of the inhibiting mediator from the terminals of inhibiting neurons.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CATALYTIC HYDROGENATION OF NITRILES ON A STATIONARY NICKEL ALUMINUM CATALYST -U-

AUTHOR--ZELENAYA, SH.A., BASOV, A.S., PAVLOV, A.A., PETRYAKOVA, N.K., GUSHCHIN, N.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 11-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CATALYTIC HYDROGENATION, NICKEL BASE ALLOY, ALUMINUM CONTAINING ALLOY, ORGANIC NITRILE COMPOUND, PRIMARY AMINE, FATTY ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1452 STEP NO--UR/0064/70/046/001/0011/0012

CIRC ACCESSION NO--AP0101538

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0101538
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CATALYST FOR THE HYDROGENATION OF NITRILES WAS PREPD. BY PARTIAL LEACHING OF AL FOR 1:1 NI AL ALLOY BY 20PERCENT NAOH AT 100DEGREES. THE NITRILES OF C SUB17 TO C SUB20 SYNTHETIC FATTY ACIDS WERE HYDROGENATED BY H IN THE PRESENCE OF NH SUB3 AT 85 TO 120DEGREES-50 ATM, WITH FLOW RATE OF NITRILES 0.25 AND NH SUB3 0.32 VOL.-HR, TO GIVE 100PERCENT CONVERSION TO AMINES. THE CONCN. OF PRIMARY AMINES IN THE PRODUCT WAS 84.8PERCENT, THAT OF SECONDARY AND TERTIARY AMINES WAS 11.9PERCENT. AT GREATER THAN 100DEGREES, THERE WAS A SHARP DECREASE IN SELECTIVITY.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SPIN SPIN AND SPIN LATTICE RELAXATIONS IN COMPLEXES BASED ON ANTIMONY TRICHLORIDE AND ANTIMONY TRIBROMIDE -U-
AUTHOR-(03)-GRECHISHKIN, V.S., GUSHCHIN, S.I., SHISHKIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 145-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPIN LATTICE RELAXATION, BROMINE ISOTOPE, CHLORINE ISOTOPE, COMPLEX COMPOUND, NUCLEAR RESONANCE, RAMAN SPECTRUM, ANTIMONY ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1234 STEP NO--UR/0192/70/011/001/0145/0148

CIRC ACCESSION NO--AP0116696
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0116696
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING COMPLEXES OF BR AND CL ISOTOPES WERE STUDIED BY MEANS OF NUCLEAR QUADRUPOLE RESONANCE (17-180 MHZ) AND BY RAMAN SPECTROSCOPY: ALPHA-S8BR SUB3, 2S8BR SUB3.-C SUB6 H SUB6, 2S8BR SUB3.PH SUB2 CH SUB2, S8BR SUB3.PHOME, 2S8CL SUB3.PH SUB2 CH SUB2. SIGNALS OF SPIN QUADRUPOLE ECHO WERE OBSD. IN NUCLEI OF PRIME35 CL, PRIME79 BR, PRIME81 BR, PRIME121 SB, AND PRIME123 SB. IN THE CASE OF BR ISOTOPES, QUADRUPOLE RELAXATION INFLUENCES BOTH T SUB1 AND T SUB2. AT 292DEGREESK T SUB1 SIMILAR TO T SUB2. FACILITY: PERM. GOS. UNIV. IM. GOR'KOGO, PERM, USSR.

UNCLASSIFIED

USSR UDC: 536.46:533.6

LISIYENKO, V. G., VORONOV, G. V., GUSHCHIN, S. N.

"Characteristics of the Velocity Field of a Gas Jet"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSSR (Works of the Institute of Metallurgy. Ural Affiliate of the Academy of Sciences of the USSR), 1970, vyp. 21, pp 124-130 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B791)

Translation: A computational analysis is made of the characteristics of the field of velocities in the cross sections of a burning gas jet. The optimum density and relative velocity in the cross sections of the burning jet are calculated on the basis of use of relationships of the theory of a free diffusion turbulent flare and application of conditions of similarity of the fields of dynamic heads in the cross sections of a cold jet and a burning flare, and the change in relative density lengthwise of the flare is determined. It is shown that within the limits of the zone of intense burning of the flare, the field of velocities in the beginning of the zone is more uniform in the flare than in the cold jet. At the end of this zone, the field of velocities becomes less uniform than in the cold jet. Conclusions are drawn on the effect of density on the position of the maximum velocity on the axis. It is shown how the caloricity of the gas affects manifestation of the velocity maximum. Yu. F. Dityakin.

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1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--PROTON POLARIZATION IN ELASTIC AND INELASTIC SCATTERING OF MAGNESIUM 25 AT E SUBP EQUALS 6.08 MEV -U-

AUTHOR-(05)-CHUBINSKIY, O.V., KUZMITSKIY, I.V., VAGANOV, P.A., GUSTOVA, L.V., GUSHCHIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 29-32

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ELASTIC SCATTERING, INELASTIC SCATTERING, PROTON POLARIZATION, MAGNESIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0174 STEP NO--UR/0367/70/011/001/0029/0032

CIRC ACCESSION NO--AP0048466

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--090CT70

2/2 014

CIRC ACCESSION NO--AP0048466

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLARIZATION ANGULAR DISTRIBUTION OF 6.08-MEV P ELASTICALLY SCATTERED ON PRIME25 MG WAS MEASURED AT 30-150DEGREES IN THE LAB. SYSTEM BY USING THE DOUBLE SCATTERING METHOD. THE 1ST TARGET WAS 2-MG-CM PRIME2 SELF SUPPORTING METALLIC MG FOIL, ENRICHED WITH PRIME25 MG UP TO 92PERCENT, THE 2ND ONE WAS 8-MG-CM PRIME2 GRAPHITE PLATE. THE SCATTERED P WERE REGISTERED WITH A TELESCOPE DETECTOR, CONSISTING OF A PROPORTIONAL COUNTER AND OF A SI-LI DETECTOR, PLACED INSIDE THE PROPORTIONAL COUNTER. THE P BEAM THROUGH MG TARGET WAS 5-6 MUA. THE INSTRUMENT ASYMMETRY WERE MEASURED WITH 11 MG-CM PRIME2 AU FOIL. THE EXPTL. RESULTS ARE COMPARED IN A GRAPH WITH THE CALCNS. BY MEANS OF THE OPTICAL MODEL. THE VALUES OF THE POLARIZATION OF INELASTICALLY SCATTERED P CORRESPONDING TO THE STATES 1.614 MEV (SEVEN HALVES PLUS) AND 1.960 MEV (THREE HALVES PLUS) WERE OBTAINED AT 60, 70, 80, 90, 100, AND 140DEGREES. FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

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CHUBINSKIY, O. V., VAGANOV, P. A., GUSTOVA, L. V., GUSHCHIN, V. N., KUZ'MITSKIY, I. V., SEREBROV, A. P., Leningrad State University

"Proton Polarization in Elastic and Inelastic Scattering by Mg-25 at E_p = 6.08 Mev"

Moscow, Yadernaya Fizika, Vol 11, No 1, 1970, pp 29-32

Abstract: Continuing their study of proton polarization in elastic and inelastic scattering by magnesium isotopes, the authors describe results of measurements of the angular dependence of the polarization of 6.08 Mev protons in elastic scattering on Mg-25 in an angle range of from 30° to 150° (laboratory system). This is the first time that results have been obtained for the proton energy range considered. The double scattering method was used for the measurements. At certain angles (θ = 60°, 70°, 80°, 90°, 100°, and 140°) it was possible to obtain the value of the polarization of inelastically scattered protons corresponding to the states 1.614 Mev ($7/2^+$) and 1.960 Mev ($5/2^+$). Since in future the authors intend to make a combined analysis of the data obtained by them on the polarization of 6-Mev protons in elastic and inelastic scattering by the isotopes Mg-24, Mg-25, and Mg-26, including the results of

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CHUBINSKIY, O. V., et al., Yadernaya Fizika, Vol 11, No 1, 1970, pp 29-32

recent measurements of variation with energy of proton polarization in scattering by Mg-24, the present article is limited to a comparison of experimental results for Mg-25 with calculations according to the optical method.

The authors thank the operations group of the Cyclotron Laboratory of the Scientific Research Institute of Physics, Leningrad State University.

2/2

USSR UDC 621.317.34

GUSHCHIN, V. V., BELOZEROV, V. G., GORDEYEV, V. A.

"A Method of Measuring the Parameters of Narrow-Band SHF Filters"

V sb. Radioelektron. v nar. kh-ve SSSR (Radio Electronics in the Soviet National Economy--collection of works), Kuybyshev, 1971, pp 374-376 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11A311)

Translation: The authors point out the shortcomings of an automatic measurement installation of the "Astra" type as used in measuring the parameters of narrow-band devices. A new method of measuring the characteristics of narrow-band SHF filters is considered, which is essentially as follows. A microwave signal from a fixed-frequency oscillator and a wobbulator signal from a frequency-response meter are sent to the mixer. As a result of conversion, the signal from the frequency-response meter is moved to the predetermined SHF band and fed to the filter to be studied. The passband of the filter is analyzed by means of the microwave signal taken off at the output of the mixer with deviation in the required frequency range. After amplitude detection, the signal is sent to the vertical deflection amplifier

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110002-2"

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GUSHCHIN, V. V. et al., Radioelektron. v nar. kh-ve SSSR, Kuybyshev, 1971, pp 374-376

of the frequency-response meter and the frequency response of the filter is observed on the screen of the meter. E. L.

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PILOT PLANT TESTING OF VIBRATING MIXERS IN CADMIUM PLANT TECHNOLOGY -U-

AUTHOR-(05)-KHAN, O.A., GUSHCHIN, YU.A., PIKOV, N.KH., AYDAROV, R.ZH., AYDAROVA, P.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1) 19-21

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--MATERIAL MIXING, VIBRATION EFFECT, CADMIUM, COPPER, ZINC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0751 STEP NO--UR/0136/70/043/001/0019/0021

CIRC ACCESSION NO--AP0107293 UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107293

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MIXER USED IS DESCRBIED. THE RESULITS ARE PRESENTED OF PILOT PLANT TESTING OF VIBRATING MIXERS IN DISSOLN. OF CD AS WELL AS OF CU CONTG. INDUSTRIAL PRODUCTS; ALSO PRESENTED ARE THE RESULTS OF CEMENTATION OF CD AND CU IN SOLNS. BY ZN DUST UNDER CD PLANT TECHNOLOGY CONDITIONS. THE DATA OBTAINED WERE SUBMITTED AS THE BASIC DATA ON WHICH TO BASE THE DEVELOPMENT AND CONSTRUCTION OF EXPTL. INDUSTRIAL VIBRATING MIXERS (VIBROAGITATORS) WITH CAPACITIES OF 10-15 M PRIME3.

UNCLASSIFIED

1/2 - 021 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--NEW SILICATE LAMINATED SAFETY GLASSES -U-

AUTHOR--CHERINSKIY, B.Z., GUSHCHINA, G.I.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(1), 18-23

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SILICATE, ACRYLIC ACID, PLASTICIZER, METHYL METHACRYLATE, SILICATE GLASS, ADHESIVE, THERMAL STABILITY, SAFETY GLASS, LAMINATED GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1219 STEP NO--UR/0072/70/027/001/0018/0023

CIRC ACCESSION NO--AP0104585
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104585

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAFETY GLASS WAS MANUFD. FROM A TOUGHENED SILICATE GLASS AND A COPOLYMER (I) INTERLAYER (COMPOSED OF 57-67PERCENT ME METHACRYLATE, 1-3PERCENT ACRYLIC ACID (II) AND PLASTICIZED WITH 30-40PERCENT DI-BU PHTHALATE). THE SURFACE OF THE SILICATE GLASS WAS BEST MODIFIED WITH AN AQ. ALC. SOLN. OF AN STP POLYMER FILM. ADDN. OF II TO THE POLYMG. MIXT. INCREASED THE ADHESIVE STRENGTH OF THE I INTERLAYER TO 80-100 KG-CM PRIME2 AND PRESERVED ITS THERMAL STABILITY. THE OPERATING TEMP. RANGE OF THE SAFETY GLASS DEPENDED ON THE THICKNESS OF THE I LAYER.

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USSR

UDC 389.0.009.01(4:103):621.317.335

KROTKOV, I. N. and GUSHCHINA, T. M.

"Unity of Electric Capacitance Measurements in Member Countries of the Council of Mutual Economic Aid"

Moscow, Izmerital'naya Tekhnika, No 6, 1972, pp 9-12

Abstract: A report is given on the state of electric capacitance measurements in member countries of the Council of Mutual Economic Aid. A description is given of the verification system, developed in the USSR, which forms the basis for the provision of measurement unity among the member countries; also described are the methods and equipment used for applying the upper element of this verification system. Results of comparisons, among the member nations, of standard capacitors on the 10^5 and 10 picofarad level are presented. Accomplishments over the past five years include an increase of exactness, to the extent of one or two orders of magnitude, and correctness in the reproduction of electrical units (capacity, resistence, inductivity), as well as unity in the transmission of unit size within a rather large range of nominal values and frequencies. 5 tables. 3 references.

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UDC: 621.317.335:539.216.2

SEMENOV, Yu. P., GUSHCHINA, T. M., EPSHTEYN, S. L., SHVEDOV, O. A.

"Determination of the Dielectric Characteristics of Thin Films"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 110-115 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A355)

Translation: Methods of determining the permittivity and loss angle of dielectric films used in capacitor construction are briefly classified. The peculiarities of various groups of methods are examined; the authors propose and study a noncontact method which does not require a preliminary determination of film thickness. The procedure is described and its error is indicated. Contact methods using electrodes in the molten state are most suitable for single-layer thin film specimens. A measurement cell with special electrodes of In-Ga-Zn alloys has been developed for use with this method; the design of the cell is described, and its basic technical characteristics are given. A table of measurement results is presented. Bibliography of one title. E. L.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--INFLUENCE OF METHODS OF MEASURING ON THE RESULTS OF ELECTROTRANSPORT -U-

AUTHOR-(02)-BELASHCHENKO, D.K., GUSHCHINA, YE.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2) 404-7

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, CHEMISTRY

TOPIC TAGS--MEASUREMENT, BISMUTH, CADMIUM, LEAD, MATERIAL MIXING, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0278 STEP NO--UR/0076/70/044/002/0404/0407

CIRC ACCESSION NO--AP0113208
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 016

CIRC ACCESSION NO--AP0113208

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE IN THE EFFECTIVE CHARGE Z, DURING MIGRATION IN MIXT. OF BI (SIMILAR TO 1 AT. PERCENT) IN LIQ. CD AT 360DEGREES AND OF PB (SIMILAR TO 0.02 AT. PERCENT) IN CD AT 370DEGREES, WAS DETD. BY AN EQUIL. DIFFUSION METHOD USING HORIZONTAL AND VERTICAL GLASS CAPILLARY TUBES. IN ALL INSTANCES, THE VALUE OF Z WAS NOTICEABLY HIGHER WHEN DETD. IN THE HORIZONTAL CAPILLARY. FOR DIL. SOLNS. OF BI IN CD, Z SUBBI EQUAL 13.1 PLUS OR MINUS 1.1 AND FOR PB IN CD, Z SUBPB EQUAL 5.95 PLUS OR MINUS 0.35. FACILITY: INST. STALI SPLAVOY, MOSCOW, USSR.

UNCLASSIFIED

UDC 621.391.8

USSR

GUSINSKAYA, G. V.

"Processing a Noise Radar Signal by the Method of Spectral Analysis"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 951-953

Abstract: Optimal processing of a noise radar signal by the method of dual spectral analysis has been proposed earlier [Poirier, Zarubezhnaya radioelektronika, No 7, 12, 1969]. This method is based on the fact that the spectrum of the sum of the signal and its delayed duplicate acquires a modulation, whose frequency is proportional to the amount of the delay. Measuring the target range in this case consists in determining the spectrum of the spectral density function of the power of the total signal obtained as a result of the first analysis. Processing a signal by the dual spectral analysis method is identical to the formation of the mutual correlation functions, but in contrast to the correlation methods, the delay of the reference signal is not required. With all the advantages of correlation processing, the method of processing by double Fourier transformations has its peculiarities. When detecting several targets, in addition to the frequencies corresponding to the target ranges,

USSR

GUSINSKAYA, G. V., Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 951-953

frequencies occur which correspond to the distance between the targets which in the case of radar lead to the occurrence of false targets. These problems are analyzed and illustrated.

The presence of combination components in the spectrum of the reflected signal is an essential disadvantage of processing radar signals by the spectral analysis method. The magnitude of the combination components is inversely proportional to the power of the reference signal, but it is undesirable significantly to increase the reference voltage as a result of decreasing the power of the useful components. The magnitude of the combination components is of the same order as the signal reflected from the distant target. Consequently, special measures must be taken to eliminate false signals. If the complete suppression of the interfering components is achieved, the reference signal power must be selected from the condition of maximum useful components.

$$|\Gamma_0|^2 = \sum_j |\Gamma_j|^2$$

2/3

USSR

GUSINSKAYA, G. V., Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 951-953

where Γ_0 is the reference voltage which is part of the aggregate signal, Γ_j is the voltage reflection coefficient of the reflector. In some special cases the combination frequencies can be used as additional information about the mutual arrangement of the targets. In this case the reference signal must be taken less than the power of the reflected signal.

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF THE CAPTURE MECHANISM ON THE CYCLOTRON RESONANCE LINE SHAPE OF HOT CARRIERS -U-

AUTHOR-(04)-GERSHENZON, YE.M., GUSINSKIY, E.N., RABINOVICH, R.I., SOINA, N.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 739-44

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CYCLOTRON RESONANCE, THERMAL EFFECT, CARRIER DENSITY, LINE WIDTH, ACOUSTIC SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1986 STEP NO--UR/0181/70/012/003/0739/0744

CIRC ACCESSION NO--AP0105060
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

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CIRC ACCESSION NO--AP0105060

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LINE SHAPE WAS STUDIED OF CYCLOTRON RESONANCE OF HOT CARRIERS UNDER CONDITIONS WHEN THEIR CONCN. VARIES ON HEATING. CASES WERE ANALYZED OF CONST. AND VARIABLE (WITH HEATING) CONCNS. OF RECOMBINATION CENTERS. THE ENERGY DEPENDENCE OF THE CAPTURE COEFF. ALPHA(EPSILON) CONSIDERABLY AFFECTS THE SHAPE OF THE CYCLOTRON RESONANCE LINE AND THE DEPENDENCE OF ITS HALFWIDTH ON THE POWER. EXPRESSIONS ARE OBTAINED FOR THE SHAPE OF THE CYCLOTRON RESONANCE LINE UNDER THE CONDITIONS OF ACOUSTICAL SCATTERING AND ALPHA(EPSILON) VARIES DIRECTLY AS EPSILON PRIME K NEGATIVE. IN THIS CASE, THE DEPENDENCE OF THE HALFWIDTH OF THE LINE ON THE POWER IS THE SAME AS AT CONST. CONCN. OF CARRIERS. DATA ARE GIVEN FROM EXPTS. ON HEATING OF HOLES IN PURE GE WHEN THEIR CONCN. CHANGES WITH THE POWER.

FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FIELD DEPENDENCE OF THE CONCENTRATION OF CARRIERS IN GERMANIUM UNDER INTRINSIC PHOTOEXCITATION CONDITIONS -U-

AUTHOR-(04)-GERSHENZON, YE.M., GUSINSKIY, E.N., RABINOVICH, R.I., SOINA, N.V.

6

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 969-74

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--GERMANIUM, ELECTRON, PHOTOEFFECT, LIGHT EXCITATION, CYCLOTRON RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0350 STEP NO--UR/0181/70/012/004/0969/0974

CIRC ACCESSION NO--AP0126106

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126106

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN AND DISCUSSED OF THE MEASUREMENTS OF THE FIELD DEPENDENCE OF CONCN. OF HOT ELECTRONS AND HOLES IN PURE GE AT 4.2DEGREESK. THE MEASUREMENTS WERE CARRIED OUT BY THE METHOD OF CYCLOTRON RESONANCE, WHICH ALLOWS ONE TO STUDY THE SEP. FIELD DEPENDENCES OF THE CONCN. OF ELECTRONS AND HOLES. THE CARRIER CONCN. NECESSARY FOR THE MEASUREMENTS WAS CREATED BY LIGHT WITH WAVELENGTHS LAMBDA IS LARGER THAN OR EQUAL TO 1.65 MU (VOL. EXCITATION) AND LAMBDA EQUALS 0.8 MU (SURFACE EXCITATION). THE CONCN. OF ELECTRONS IS INDEPENDENT OF THE ABSORBED MICROWAVE POWER IN THE SURFACE AS WELL AS VOL. EXCITATION. THE CONCN. OF HOLES IS INDEPENDENT OF THE POWER IN THE SURFACE EXCITATION AND INCREASES CONSIDERABLY WITH THE POWER IN THE VOL. EXCITATION. DEPENDENCES OBSD. IN THE VOL. EXCITATION CAN BE EXPLAINED BY ASSUMING THAT RECOMBINATION OF CARRIERS TAKES PLACE ON THE DEEP LYING IMPURITIES. THE ENERGY DEPENDENCE OF THE COEFF. OF CAPTURE OF HOLES ON DEEP CENTERS EXHIBITS CORRESPONDENCE WITH THE LAX THEORY FOR H LIKE IMPURITIES. FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

Nuclear Physics

USSR

ANDREYEV, D. S., GUSINSKIY, G. M., YEROKHINA, K. I., KUDOYAROV, I. K. H., LEMBERG, I. K. H., CHUGUNOV, I. N., Physico-Technical Institute imeni A. I. Ioffe, Academy of Sciences, USSR

"Quadrupole Moment of the Nucleus ^{114}Cd in the First Excited State"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 8, 20 Apr 70, pp 369-370

Abstract: In the present work a cyclotron is used for the first time to determine the value of the quadrupole moment (Q_{2^+}) of the first excited state in ^{114}Cd. In order to eliminate the effect of instability of the intensity and energy of accelerated ions on the results of measurements, the experiments employed simultaneous acceleration of the singly charged α particles and the triply charged ions of carbon with energies of 8 and 24 Mev respectively. In this case the value of the Coulomb parameter ζ for both kinds of particles is practically identical and errors originating during comparison are minimal. In separate experiments it was shown that during simultaneous acceleration the ratio of the energies of the light and heavy particles is preserved with a precision not worse than 0.1 percent, and the error of determining Q_{2^+} connected with this does not exceed 10 percent.

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USSR

ANDREYEV, D. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 8, 20 Apr 70, pp 369-370

In contrast to other work in which the spectra of γ rays were registered in accordance with ions selected by energy, in the present work the spectra of backward-scattered ions were measured in accordance with γ -quanta selected by energy. The value of Q_2^+ was determined as:

$$Q_2^+ = -(0.53 \pm 0.17) \text{ barn.}$$

This contrasts with three other works in which the value of Q_2^+ lies in the limits $-(0.42 + 0.90)$ barn and a later work in which the value of Q_2^+ is close to zero. 6 ref. Received by editors 10 March 1970.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--QUADRUPOLE MOMENT OF CADMIUM 114 IN THE FIRST EXCITED STATE -U-

AUTHOR-(05)-ANDREYEV, D.S., GUSINSKIY, G.M., YEROKHINA, K.I., KUDOYAROV, M.F., LEMBERG, I.KH.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(8), 369-70

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--EXCITED STATE, CADMIUM ISOTOPE, CYCLOTRON, QUADRUPOLE MOMENT, CHARGED PARTICLE, ALPHA PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0515 STEP NO--UR/0386/70/011/008/0369/0370

CIRC ACCESSION NO--AP0137604

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137604

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUADRUPOLE MOMENT Q SUB2 POSITIVE) OF PRIME114 CD WAS DETD. IN A CYCLOTRON BY USING THE SIMULATANEOUS ACCELERATION OF SINGLY CHARGED 8-MEV ALPHA PARTICLES AND TRIPLY CHARGED 24 MEV C IONS; Q SUB2 POSITIVE EQUALS MINUS (0.53 PLUS OR MINUS 0.17) B. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASS D

Acc. Nr.: AP0100791 Ref. Code: UR 0182

USSR UDC: 621. 735.32

FILIMONOV, Yu. F. and GUSINSKIY, V. I.

"Investigating the Cold Hydrostatic Stamping Process"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No. 2, 1970, pp 6-8

Abstract: The change in plasticity and the resistance to deformation of cylindrical objects of various alloys in a fluid under high pressure are considered in this experimental article. The experiments were conducted in a container of the fluid under a hydraulic press exerting a pressure up to 12,000 kg s/cm^2. A drawing of the test container is given. The liquid was a mixture of ethylidene glycol and glycerin in equal amounts, capable of being compressed to 20,000 to 30,000 kg s/cm^2 without heating. The pressure of the fluid was measured with a type 3V manometer of the first class, and the stress deforming the object was de-

1/2 18

Reel/Frame 19850298

Acc. Nr.: AP0100791

termined by a tensometer and an oscillograph through the difference between the readings for the total tension on the object and the fluid pressure, and the pressure of the fluid without the object. It was established that the frictional losses in the condensation under high pressure remain stable, but under fluid pressures of 8000 to 10,000 kg s/cm^2, they amount to 5-3% of the force on the plunger generating the pressure. The samples tested were duralumin type D1, brass type LS59-1, bronze type AZh9-4, titanium alloy type VT6, high-speed steel type R18. The authors conclude with the assertion that the study of macro- and microstructures through cross sections of the deformed specimens confirms that the pressure of the surrounding medium has no effect on the structure of the alloy.

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REEL/FRAME
19850299

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--AN ELECTRONIC COMPUTER -U-

AUTHOR--GUSKOV, P.

COUNTRY OF INFO--USSR

SOURCE--SOVETSKAYA ROSSIYA, SEPTEMBER 3, 1970, P 4, COL 4

DATE PUBLISHED--03SEP70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--TRANSISTORIZED CIRCUIT, COMPUTER/(U)URAL 2 COMPUTER, (U)PROMIN COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1656 STEP NO--UR/9022/70/000/000/0004/0004

CIRC ACCESSION NO--AN0138632

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AN0138632

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE URALS RAILROAD CAR CONSTRUCTION PLANT HAS TRANSFERRED ITS ELECTRONIC COMPUTER "PROMIN" TO THE NIZHNIY TAGIL NIGHT SCHOOL OF THE URAL POLYTECHNIC INSTITUTE IMENI KIROV. THE TRANSISTORIZED COMPUTER HAS THE SAME STORAGE CAPACITY AND IS JUST AS FAST AS THE "URAL-2" COMPUTER.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201110002-2"

USSR

UDC 621.43.52

GUS'KOV, V. P., PRISEDSKIY, N. N., SHCHERBATENKO, V. V.

"One Method of Determination of the Transient Characteristics of a Pressure Sensor with a Pipe"

Samoletostr. i Tekhn. Vozd. Flota. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Aircraft Construction and Air Force Technology. Republic Interdepartmental Thematic Scientific and Technical Collection], 1971, No. 25, pp 25-35. (Translated from Referativnyy Zhurnal Aviatsionnye i Raketnye Dvigateli No 1, 1972, Abstract No 1.34.70, from the resume).

Translation: A hydraulic installation for investigation of the transient processes in low-frequency pressure sensors with connecting tubes of various geometries is described. The perturbation signal at the input of the measuring lines is formed by clearing the pressure through an electromagnetic valve. A method is presented for performing experiments. A critical analysis of the attentuation quality diagrams is presented on the basis of experimental curves of the transient processes. The results of tests clarifying the quadratic resistance factor of the connecting lines of the sensors are presented. 7 figs; 2 biblio refs.
1/1

USSR

UDC 629.7.963.6:531.787

GUS'KOV, V. P.

"Approximation Evaluation of the Quality of Transient Processes in the Tubing-Pressure Transducer System"

Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb. (Aircraft Building and Air Fleet Engineering, Republican Interdepartmental Scientific-Technical Collection), 1970, vypusk 22, pp 47-54 (from Referativnyy Zhurnal-Aviatsionnyye i raketnyye dvigateli, No 12, Dec 70, Abstract No 12.34.109)

Translation: The equation of the transient process in the gauge lines of low-frequency pressure transducers is examined with reference to the quadratic law of hydraulic resistance in the feed channel. Difficulties caused by the parabolic type nonlinearity were overcome by harmonic linearization in accordance with the "self-resonance" hypothesis. An approximation function of the form $p(t) = a(t)\sin\psi(t)$ was obtained, based on the Ye. P. Popov method. It was shown to be possible to obtain a preliminary evaluation of the dynamic characteristics of the gauge lines by plotting attenuation quality diagrams as a function of the geometrical parameters. The findings can also be applied in studying the dynamics of hydraulic regulators of flight craft engines. Illustrations: 2. Bibliography: 11 entries.

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USSR

UDC 619:616.931.42-078:636.22/.28

MUFTEYEV, F. G. and KONOVALOV, I. F., Bashkir Scientific and Practical Veterinary Laboratory, ASHAIKIN, A. F., YUREYCHUK, V. P., and GUS'KOV, V. V., Primorskiy Kray

"Allergic Diagnosis of Brucellosis"

Moscow, Veterinariya, No 11, 1972, pp 59-61

Abstract: The use of brucellin resulted in the detection of diseased cattle that did not react serologically to brucellosis. In herds where the course of the disease was acute, 7.8 to 24% more animals reacted positively to the preparation than in the agglutination and complement-fixation tests. Antibodies were found in almost half of the positive within 15 to 30 days. Brucellin was injected subcutaneously into the lower lid of one of the animal's eyes. A positive reaction in a sick animal was manifested within 48 hours by pronounced edema at the injection site, readily evaluated by inspection or palpation.

1/1

USSR

GUSKOVA, A., Professor

"First Aid and Treatment in Case of Radiation Injuries"

Moscow, Voyennyye Znaniya, No 12, Dec 70, pp 36-37

Translation: In a future war, in case the imperialists attempt to unleash it, the possibility of the enemy using nuclear weapons is not excluded. This makes it necessary for our scientists to give serious consideration to the problems of diagnosis, prophylaxis, and treatment of acute radiation injuries.

Rendering immediate effective assistance to a large number of people injured by a nuclear explosion depends to a large extent on the level of training of the medical personnel and of the heads of various services whose duty it is to set up the necessary conditions for carrying out the entire set of measures. The economic and strictly medical resources of various regions should be studied carefully in good time, and large-scale training of the personnel entrusted with organizing and carrying out the whole set of measures must be conducted.

1/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

In order to solve these problems correctly, and, in particular, to evaluate the probable situation in case the enemy were to use nuclear weapons, several circumstances must be taken into account. First of all, there is the mass character and complex nature of the injuries due to the simultaneous effect of thermal, mechanical, and radiation factors of the explosion. Besides, a serious disorganization of all life-support systems of the people is possible.

Preliminary estimates by U.N. experts preparing the document on non-proliferation of nuclear weapons, have convincingly demonstrated all the difficulties in solving the medical problems in a similar situation. A hypothetical city with about 1 million inhabitants was taken as an example. In case a 1 mt atom bomb explodes over it, several tons of thousands of injured will require surgical aid. In addition, in one sixth of the cases their condition will be aggravated by severe radiation injuries. The given figures concern only surgical treatment. The problem becomes even more complicated, if it is considered in all its ramifications as the situation requires it.

2/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

Everybody recognizes that the most immediate task is sorting out the injured during the first hours and days after the nuclear explosion. It is extremely important to determine, as soon as possible, the urgency of the need for medical assistance and the extent of therapeutic and prophylactic measures required by the various groups of injured. In addition, the routes and time needed for the evacuation must be decided and essential decisions must be made about the regulations governing the way of life of people in the various zones of the central impace area. Only under these circumstances can the limited resources of medical services by rationally utilized, and attention focused on the most urgent and promising cases from the point of view of medical treatment.

It can be expected that genuine radiation injuries will be most frequent if relatively small-caliber nuclear warheads are used, and also in areas somewhat removed from the center of the explosion. The basic clinical form of radiation injury requiring effective medical aid is acute radiation sickness, caused by external gamma-radiation from the radioactive fallout.

The present system of therapeutic measures makes it possible to cure people who have been exposed to doses of 150 to 1,000, that is, in all cases where the

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

severity and outcome of radiation sickness is determined by the injuries sustained by the hemopoietic organs and by symptoms of tendency to hemorrhage and complications due to infections.

Radioactive fallout coming in contact with the skin and the mucosa at the time the mushroom cloud is formed does not significantly increase the overall amount of the radiation, and does not have a noticeable effect on the clinical symptoms of the disease. There is a possibility of only small deviations due to additional local irradiation of uncovered areas of skin and mucous memberances of the mouth, nose, and intestines. Therefore all recommendations regarding the treatment of acute radiation sickness caused by purely external irradiation, remain valid in similar cases.

Taking into account the clinical symptoms of acute radiation sickness and their effect on the outcome of the sickness, therapeutic measures are divided into three groups. The initial stage is first aid for general reactions to radiation and immediate measures for complex injuries. Then there are the thera-

4/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

peutic and prophylactic measures aimed at alleviating the severity of the injury and re-establishing hemopoiesis, and also reducing the tendency to hemorrhage. Finally, there is the matter of dealing with complications due to infections, which are especially dangerous when radiation sickness is complicated by burns and wounds. The importance of all these measures has been confirmed by a sufficient number of observations made by scientists in our country and abroad.

A marked initial reaction occurs as a result of general irradiation doses exceeding 200. First aid in this case consists of simple measures easing or preventing vomiting. Preparations such as atropine, aminazin, dimedryl, and vitamin B_6 (pyridoxine) are effective. The opinion has been voiced that alcohol has a beneficial effect, but that is an obvious error.

In the entire range of doses up to 1,000, the initial reaction is such that it permits relying on active help and mutual assistance by the injured themselves. They are in a condition to tolerate all modes of transportation, and in case the dose of radiation does not exceed 400-500, they are capable of leaving the impact center on their own.

5/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

In case of combined injuries, the tasks become more complicated. There is a need for radical surgery at the earliest possible moment. Let us point out that many of these radical treatments (administration of fluids, anesthesia, and so on) at the same time alleviate initial radiation reactions and thus prove doubly useful.

Prophylaxis of already existing infections and their treatment is equally important. These measures are especially important in case potential sources of infection such as burn or wound surfaces are present.

After many years of discussions, the majority of specialists has recognized the importance of infections; not only the ones originating in the environment (exogenous), but also those in the patient's organism (endogenous). Under normal circumstances, endogenous infections remain hidden and do not manifest themselves. However, they can be activated in connection with radiation injury. Therefore, in radiation injuries caused by doses of 250-400, especially cases combined with burns and traumas, antibacterial preparations with a broad spectrum of action are

6/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

prescribed relatively early for prophylaxis. Later on the quantity, type, and duration of application of these preparations are determined on the basis of more accurate clinical microbiological indications.

The experience of Soviet scientists shows that timely prescription of antibiotics of the tetracycline, streptomycin, penicillin type, and others, not only reduces the symptoms from actual infaction (fever, general intoxication) in the third phase of radiation sickness; but also greatly alleviates or completely eliminates the symptoms of an increased tendency to hemorrhage, even after doses up to 400-800.

In the early stages of radiation sickness, externally administered preparations with broad spectrum and prolonged effect are preferable. Later on, they should be alternated (in cycles) and must be combined with antibiotics like nystatin and levorin. The administration of large doses of gamma-globulin is indicated.

The question of using blood substitutes and means to reestablish the disrupted hemopoiesis is more complex, especially in the case of mass injuries.
7/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

Doubtless the limited supply of blood, blood components and substitutes is going to be used mainly in cases of combined injuries and also in the third phase of the disease -- at the height of acute radiation sickness (range of doses: 400-1,000). Important research is being done that will enable us to determine with certainty, in what quantity and for how long suspensions enriched with formed elements (leukocytes and thrombocytes) must be administered in order to compensate for the deficiency of those elements in the blood in the second and third stages of the disease.

Early transplantation of bone marrow is certainly of value, especially in individual instances of overall irradiation with doses on the order of 400-1,000. A temporary implantation of cell elements of transplanted bone marrow makes it possible to compensate for the hemopoiesis suppressed by radiation, and that at the most crucial period -- before the injured organism's own regenerative processes begin.

Of even more interest is the proposal of certain scientists to introduce fragments of the most important types of protein, nucleic acids, to supply a

8/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

plastic material to replace the tissues destroyed by radiation. Work is being done on this at present.

Carefully stopping hemorrhage, early thorough treatment of wounds, dealing with infections, and administering substances strengthening the vascular system (vitamin K, rutin, vitamin C, and calcium chloride) should be considered essential measures helping to preserve the limited resources of the hemopoietic system.

A few words should also be said about the nutrition of patients with radiation and combined injuries. In the course of the entire disease, except for the brief period when the mucosa are affected, there are no special limitations regarding nutrition. It is desirable to consume not less than 2 liters of water daily. The food should have a high calorie content (2,000 cal per day) and should be enriched as much as possible with protein components and vitamins of the group A, B, C, and P. Efficient and solicitous care of the patients is of special importance during the period of marked clinical symptoms.

9/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

The other therapeutic measures are the same as for ordinary patients with fever and disrupted hemopoiesis. The physicians prescribe them on the basis of clinical symptoms (heart dysfunction, pain, extreme agitation, and so on).

Evacuation measures should be carried out at the earliest possible time. All decisions regarding transportation, including the cases of combined injuries, have to be based on overall clinical indications and counterindications. As has been said already, radiation sickness does not impose any limitations in the given instance.

Expanding the range of activities and resuming work become possible approximately 2 months after irradiation and are effected gradually.

A great deal depends on the patient himself, on his attitude. Physicians from various countries can quote many examples of people who had suffered from acute radiation sickness returning to work. Busy professional activity, even though supervised by the physician, moderate sports activity, concern for one's

10/11

USSR

GUSKOVA, A., Voyennyye Znaniya, No 12, Dec 70, pp 36-37

family are the powerful stimuli that permit the body to activate substantial reserves for regeneration and compensation. Conversely, a passive way of life, excessive concentration on one's sickness, unprofessional judgments by people around one causing psychological traumas, and also the abuse of alcohol can cause the patients to feel poorly in the later stages.

Consequently, not only all the latest achievements of medicine, but also the organism's inner resources should be mobilized to cure acute radiation injuries. This fact should be known to as many people as possible, inasmuch as ionizing radiation has already become a part of everyday life in the advanced countries.

11/11

JPRS 56019
17 MAY 72

USSR: 577.3:539.16:2

SOME METHODOLOGICAL PROBLEMS IN RADIOBIOLOGY IN THE LIGHT OF LENIN'S REFLECTION THEORY

[Article by G.D. Buysgolov, A.K. Gus'kova, Moscow, Meditsinskikh Nauk SSSR, Russian, No 3, 1972, pp 44-50]

The evolution of concepts concerning the pathogenesis of radiation lesions and the process of creating theories about the mechanism of action of radiations on the living organism illustrate the enormous gnoseological advantages of the philosophy of dialectical materialism. Of particular interest in this respect is the teaching developed by V.I. Lenin about matter and movement and his theses concerning the relativity of knowledge to gain understanding of the biological effect and create a general theory of the mechanism of action of radiation.

Concrete analysis of formation of radiobiology theory is convenient since we can trace the complex and consistent evolution of conceptions from purely external characteristics of primary phenomena, then secondary ones, etc over a relatively short period of time (less than 75 years from the time x-rays were discovered in 1895).

Let us consider in order the basic tenets of dialectical gnoseology and their reflection in radiobiology theory.

The inexhaustibility and infinity of matter, as we know, are postulated in philosophy of dialectical materialism as among its chief properties. Such a statement by no means restricts man's ability to learn the essence of a phenomenon. However, at each given moment knowledge only relatively reflects the essence of a phenomenon. This conception is the basis of scientific progress of knowledge in any area and it warns against potential vulgar simplification. Obviously, the objective value of different stages of development of scientific conceptions is not the same, as can be seen too on the example of the history of formation of concepts on the mechanism of action of radiation.

Analysis of evolution of radiobiology theory in the light of the most important theses of gnoseology could help in urgent disclosure of the essence of the phenomenon that is most accessible at this stage of development of science.

GUS'KOVA, A. K.

Biochemistry

UDC 617-001.28-074:577.1

USSR

GUS'KOVA, A. K., SADCHIKOVA, E. N., and ORLYANSKAYA, R. L., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Significance of Biochemical Studies in the Clinical Picture of Radiation Lesions in Man"

Moscow, Meditsinskaya Radiologiya, No 4, 1971, pp 52-59

Abstract: A review is presented of the Soviet literature on shifts in the biochemical indexes reflecting the various forms of radiation sickness in man, severity of the lesions, hormonal and metabolic disorders, etc. The diagnostic value of the indexes is discussed and reference is made to their value as criteria of the effectiveness of therapy. The data are summarized in four tables (acute radiation sickness from a single exposure to gamma or neutron radiation, lesions caused by hepatotropic isotopes, long-term effects and clinical prestages of lesions by osteotropic elements, lesions with maximum distribution of radiant energy in muscle tissue) under the various tests, optimum time for running the tests, and possible significance of abnormalities.

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1/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--POSSIBILITIES OF USING CLINICAL DATA AS A BASIS FOR PERMISSIBLE RADIATION EXPOSURES UNDER CONDITIONS OF PROLONGED SPACE FLIGHTS -U-
AUTHOR--GUSKOVA, A.K.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P. 46-49
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SPACE MEDICINE, RADIATION BIOLOGIC EFFECT, RADIATION DOSAGE, SYNDROME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1966 STEP NO--UR/0453/70/004/000/0046/0049

CIRC ACCESSION NO--AP0120609
UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF AVAILABLE CLINICAL OBSERVATIONS OF THE EFFECTS OF SYSTEMATIC PROFESSIONAL EXPOSURES TO RADIATION IN AN ATTMEPT TO ESTIMATE THE PERMISSIBLE LEVELS OF RADIATION EXPOSURES DURING PROLONGED SPACE FLIGHTS. RADIATION EXPOSURE ELVELS PRODUCING CLINICAL SYNDROMES DURING VARIOUS MANIFESTATIONS OF THE RADIATION DISEASE ARE DISCUSSED. SUGGESTIONS ARE GIVEN FOR FURTHER CLINICAL STUDIES TO COLLECT MORE DATA ON THE DEVELOPMENT OF CHRONIC RADIATION DAMAGES AS CRITERIA FOR THE ESTABLISHMENT OF PERMISSIBLE RADIATION EXPOSURE LEVELS DURING SPACE FLIGHTS.

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USSR

UDC 632.95

KHUZOVA, S. I., SVISTUNOVA, N. S., CHUS'KOVA, L. A., FADEYEV, YU. N., SAVENKOV, N. F., KHOKHLOV, P. S., and BLYUZHYUK, N. K.

A Nematocide

USSR Author's Certificate No 296546, filed 17 Nov 69, published 27 Sept 71 (from Referativnyy Zhurnal -- Khimiya, No 10(II), 1972, Abstract No 10N528 by T. A. Belyayeva)

Translation: The nematocidal activity is determined for substances of the general formula $R(OCCH_2CHCl_2)_n$ (I) (R= phenyl or arylene n=1-2), which are obtained by the reaction of halides of aromatic acids with vinyl chloride in the presence of $AlCl_3$. I is used in concentration 0.1, 0.01 and 0.001%. Some 30-50 mg I is dissolved in a 2-5-fold volume of acetone and mixed with 30-50 mg OP-7. The solution obtained is mixed with water. I ($R=C_6H_4$, n=2) (Ia) and I ($R=$ p-$C_6H_4NO_2$, n=1) (Ib) cause 100% distruction of gallic nematode. I (R and n given): p-BrC_6H_4, 1 (Ic); m-C_6H_4-NO_2, 1; n-C_6H_4Cl, 1, Ia, b cause 100% destruction of Aphelenchoides besseyi, Aphelenchus avenae, and Ia and Ic (concentration 0.1 and 0.01%) cause a 100% destruction of Ditylenchus allii.

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1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CORROSION RESISTANCE OF A TITANIUM BASE UNDER A PLATINUM COATING IN RELATION TO ANOLYTE PH -U-

AUTHOR--KHODEKEVICH, S.D., VESELOVSKAYA, I.YE., YAKIMENKO, L.M., GUSKOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 135-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TITANIUM CORROSION, PLATINUM COATING, ELECTROLYTIC OXIDATION, CORROSION TEST, SOLUTION ACIDITY, ANODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0757 STEP NO--UR/0364/70/006/001/0135/0138

CIRC ACCESSION NO--AP0104206
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0104206
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRO CHEM. AND CORROSION BEHAVIOR OF A TI BASE COVERED BY PT WAS STUDIED AT PH 0-14 AND 80DEGREES. TOW KINDS OF TI ELECTRODES WERE USED, ONE OF WHICH WAS EMERY CLEANED, DEGREASED, TREATED FOR 20 MIN IN H SUB2 SO SUB4 AT 80DEGREES, RINSED IN WATER, DRIED ON FILTER PAPER, AND KEPT IN THE AIR FOR 24 HR BEFORE USE. THIS ELECTRODE WAS CALLED AIR OXIDIZED. THE OTHER ELECTRODES WERE NOT REMOVED FROM THE SOLN. FOLLOWING ANODIC POLARIZATION AND THESE WERE REFERRED TO AS ANODICALLY OXIDIZED. A STUDY OF THE STATIONARY POTENTIAL SHOWED THAT AN INCREASE IN THE PH OF THE ANOLYTE LOWERED THE PASSIVITY OF TI WHICH WAS AT ITS STRONGEST AT PH 13-14. THE STATIONARY POTENTIAL OF PT COATED TI ANODES AT PH 0-13 WERE VERY MUCH ALIKE AND INDEPENDENT OF THE THICKNESS OF THE PT COATING. THE EFFECT OF THE TI BASE OF TH PT COATED ELECTRODE APPEARED ONLY AT PH 14 AND THIN PT COATINGS, 0.1-1.0 MU. IN A STUDY OF ANODIC POLARIZATION OF TI AND PT COATED TI, THE TI IN ALK. AND CARBONATE SOLNS. PARTICIPATED IN THE ANODIC PROCESS THROUGH PORES IN THE PT COATING. AT THE SAME C.D. THE CURRENT DRAIN THROUGH THE TI OF PT COATED ANODES WAS APPRECIABLY HIGHTER AT PH 13 THAN AT PH 9.5 OR 14. UNLIKE AT PH 9.5 AND 14, THE POLARIZATION CURVES AT PH 13 AND 11.6 ON TI AND PT COATED TI WERE ANALOGOUS, BUT THE CURRENT DRAIN THROUGH TI ROSE. THE EXPTL. RESULTS LEAD TO THE CONCLUSION THAT OXIDN. OF TI. IS THP MAIN REASON FOR THE DESTRUCTION OF THE PT COATING IN ALK. AND CARBONATE SOLNS.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE CHEMICAL METHOD OF SPECIFIC DEGRADATION OF RNA WITH SELECTIVELY REMOVED BASES. 3.FISSION OF PHOSPHOESTER BOND IN RIBOSE,2, AND

AUTHOR-(05)-TURCHINSKIY, M.F., GUSKOVA, L.I., KHAZAI, I.K., BUDOVSKIY, E.I., KOCHETKOV, N.K.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 428-434

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--RNA, CHEMICAL DECOMPOSITION, AMINE DERIVATIVE, AMINE CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0187 STEP NO--UR/0463/70/004/003/0428/0434

CIRC ACCESSION NO--AP0120885

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMINE CATALYZED FISSION WAS STUDIED OF THE PHOSPHOESTER BOND IN RHE RIBOSE,2(3), PHOSTATE, THE COMPOUND MODELLING INTERNUCLEOTIDE LINKAGE IN RNA WITH REMVOED BASE. IT WAS SHOWN THAT RIBOSE,3,PHOSPHATE WITH PHOSPHOESTER BOND IN BETA POSITION OT HE GLYCOSIDE CENTER WAS ONLY SPLIT IN THE PRESENCE OF THE PRIMARY AMINES. THE ABILITY OF AMINES INVESTIGATED TO CATALYZE THE CLEAVAGE OF THIS BOND DECREASES IN A SEQUENCE: P,ANISIDINE IS GREATER THAN OR EQUAL TO ANILINE APPROXIMATELY O,AMINOBENZOIC ACID GREATER THAN BENZYLAMINE APPROXIMATELY EQUAL TO LYSINE GREATER THAN ETHYLENEDIAMINE GREATER THAN P,AMINO BENZOIC ACID APPROXIMATELY EQUAL TO SULPHANYLIC ACID GREATER THAN BETA ALANINE APPROXIMATELY EQUAL TO METHYLAMINE. IN THE PRESENCE OF P,ANISIDINE UNDER MILD CONDITIONS (PH 5.30DEGREES, 5 HRS) THE RAPID SPECIFIC FISSION OF THE PHOSPHOSTER BOND OCCURS BOTH IN RIBOSE,3,PHOSPHATE AND IN DEURIDYLIC RNA. PHENYLHYDRAZINE CAUSES RAPID SPLITTING OF RIBOSE,2,PHOSPSHATE BUT NOT OF RIBOSE,3,PHOSPHATE. FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF SCIENCES, USSR, MOSCOW.

UNCLASSIFIED

Acc. Nr: AP0049799 Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: UR0135

101593n Determining the gas permeability of rubber goods. Gaziev, G. A.; Barkov, A. S.; Sotnikov, E. E.; Faustova, D. G.; Gusakova, N. I.; Reitlinger, S. A. (Inst. Biofiz., Moscow, USSR). *Kauch. Rezina* 1970, 29(1), 50–2 (Russ). Gas chromatog. was used to det. the permeability to N, H, and CO_2 of polychloroprene (I), natural rubber (II), or containers made of I or II bonded with adhesive SV-1. The method is suggested for testing the quality of bonded joints between plastics. CPJR

REEL/FRAME 19801721

UDC 577.472.614+577.391

USSR

GUS'KOVA, V. N., BRAGINA, A. N., ZASEDATELEV, A. A., IL'IN, B. N., KUPRIYANOVA, V. M., MASHNEVA, N. I., RODIONOVA, L. F., SUKAL'SKAYA, S. Ya., and TIKHONOVA, A. I., Leningrad Scientific Research Institute of Radiation Hygiene, Ministry of Health RSFSR

"Effect of a Mixture of Uranium Fission Products on Sanitary Conditions and Hydrobionts in Weakly Mineralized Bodies of Fresh Water"

Kiev, Gidrobiologicheskiy Zhurnal, Vol 6, No 4, Jul/Aug 70, pp 5-11

Abstract: Pollution of water with two mixtures of radionuclides (mixture I, 52% rare earth radioisotopes and 20% alkali earth elements; mixture II, 40% rare earth radioisotopes and approximately 34% zirconium 95 and niobium 95) at concentrations ranging from $2.0 \cdot 10^{-7}$ to $1.0 \cdot 10^{-5}$ curie/liter was studied. The substances did not affect the sanitary conditions or the hydrobionts studied (E. coli, protococcal algae, Infusoria, duckweed). Biochemical oxygen demand and development of saprophytic mycoflora were inhibited only at concentrations above $1.0 \cdot 10^{-3}$ curie/liter. The rate of accumulation decreased from the lowest link (microorganisms) to the highest (fish). Adverse effects of the radioisotopes on developing fish spawn varied with the stage of

1/2

USSR

GUS'KOVA, V. N., et al, Gidrobiologicheskiy Zhurnal, Vol 6, No 4, Jul/Aug 70, pp 5-11

development. Effects were evident in the early stages of embryogenesis at a concentration of $1 \cdot 10^{-5}$ curie/liter and in later stages at $1.0 \cdot 10^{-3}$ curie/liter.

2/2

USSR UDC 621.315.592

GUSLIKOV, V. M., YEMEL'YANENKO, O. V., NASLEDOV, D. N., NEDEOGLO, D. D., and TIMCHENKO, I. N.

"Effect of a Magnetic Field on the Ionization Energy of Small Donor Impurities in GaAs and InP"

Leningrad, Fizika i Tekhnika Poluprovodnikov, No 9, Sep 73, pp 1785-1789

Abstract: An analysis is made of the ionization energy of small donors as a function of the magnetic field intensity in the area of fairly weak fields, using as specimens pure GaAs and InP crystals. As described in earlier articles published in the journal noted above (V. F. Dvoryankin et al, 5, 1971, p 1882), experiments along this line have already been conducted. In the present paper, the analysis noted above is made by considering the Hall coefficient as a function of the temperature under various magnetic field intensities. A table of the parameters for n-GaAs and n-InP, together with curves of the Hall coefficient, as functions of the temperature for the various types of specimen listed in the table is given. Curves are also plotted for the Hall coefficient and the resistivity as functions of the magnetic field intensity in GaAs at 4.5° K and for the change in ionization energy of small donor impurities as a function of the magnetic field intensity. In this last curve, the theoretical results are compared with the data found by the authors of the present article and others.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--RELATION OF CHEMICAL COMPOSITIONS AND PHYSICAL PROPERTIES OF ARTESIAN WATERS WITH DEEP TECTONICS, ILLUSTRATED THE KARABAKH STEPPE -U-

AUTHOR-(03)-KRASILSHCHIKOV, L.A., GUSLITSER, M.I., MELNIKOVA, I.N.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (3), 13-15

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ARTESIAN WATER, SODIUM, CHLORINE, MINERAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0302 STEP NO--UR/0487/70/000/003/0013/0015

CIRC ACCESSION NO--AP0134106

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2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134106

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MINERALIZATION OF THE ARTESIAN WATER INCREASED DUE TO HOT AND MINERALIZED WATER WHICH PENERATED INTO THE CONTINENTAL STRATA, PRODUCING AN ANOMALY OF TEMP. AND CONTENT OF CL AND NA. THE HYDROGEOL. SURVEY SHOWED THE APPEARANCE OF BURIED DOMES.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF TEST CONDITIONS ON A COMPARATIVE EVALUATION OF THE WEAR RESISTANCE OF TIRES -U-

AUTHOR-(04)-GENNIKH, M.E., GUSLITSER, R.L., ZAKHAROV, S.P., MISHNEV, G.V.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA, 1970, 29(3), 38-41

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--MOTOR VEHICLE TIRE, WEAR RESISTANCE, TEST METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0836 STEP NO--UR/0138/70/029/003/0038/0041

CIRC ACCESSION NO--AP0124503

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124503
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOMOBILE TIRES WERE TRACK TESTED TO DEVELOP A RELIABLE METHOD FOR EVALUATING THEIR WEAR RESISTANCE. SEVERAL RECOMMENDATIONS WERE GIVEN. FACILITY: NAUCH.-ISSLED. INST. SHINNOI PRCM., MOSCOW, USSR.

UNCLASSIFIED

Coatings

USSR

UDC 621.357.7:660

FEDORCHENKO, I. M., GUSLIYENKO, Yu. A., EPIK, A. P.

"Combined Nickel-Boron Electrolytic Coatings"

Kiev, Poroshkovaya Metallurgiya, No 3, Aug, 1972, pp 31-34.

Abstract: This article studies combined nickel coatings with improved physical and mechanical properties. It is shown to be possible to produce combined Ni-B coatings with even distribution of boron particles through the volume of the matrix. Diffusion annealing of these coatings results in the formation of qualitatively new structures and increased physical and mechanical properties. The wear resistance of heat-treated Ni-B coatings is equal to or better than the wear resistance of hard chromium electrolytic coatings.

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DEGASSING DURING FRICTION IN VACUUM -U-

AUTHOR-(04)-GUSLIAKOV, A.A., ASHUKIN, A.V., KULEBA, V.I., LYUBARSKIY, I.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 1, 1970, P. 106, 107
DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FRICTION, OXIDE FILM, METAL DEGASSING, VACUUM DEGASSING, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0933 STEP NO--UR/0369/70/006/001/0106/0107

CIRC ACCESSION NO--AP0116442
UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0116442
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE KINETICS OF DEGASSING DURING DRY FRICTION IN VACUUM. THREE STAGES OF GAS SEPARATION WERE DISTINGUISHED, TWO OF WHICH CORRESPOND TO THE WORK IN PROCESS, WHILE THE THIRD CORRESPONDS TO STEADY STATE FRICTION. ON THE BASIS OF HYDROGEN DEGASSING DURING FRICTION, IT IS SUGGESTED THAT THESE STAGES CORRESPOND TO INITIAL BREAKDOWN OF THE OXIDE FILM, ITS ELIMINATION, AND FRICTION OF PURE SURFACES, RESPECTIVELY. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR. FACILITY: FIZIKO-TEKHNICHESKII INSTITUT NIZKIKH TEMPERATUR, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

(V)

USSR

UDC 669.76:79

SOKOLOV, L. D. (Editor), SKUDNOV, V. A., SOLENOV, V. M., GLADKIKH, A. N., SHETULOV, D. I., SHNEYBERG, A. M., GUSLYAKOVA, G. P., and DMITRIYEV, N. P.

Mekhanicheskiye Svoystva Redkikh Metallov (Mechanical Properties of Rare Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 288 pp

Translation of Annotation: A study is made of the mechanical properties (deformation resistance, plasticity, fatigue, creep, and stress-rupture strength) of rare and other metals, and their dependence on temperature and deformation rate. Characteristics of strain hardening, the stress and plasticity dependencies on temperature and deformation rate parameters, and other experimental data are discussed on the basis of the theory of defects and other contemporary concepts regarding the type of bonds in crystals.

The book is intended for scientists, engineers, and technicians at institutes, design institutions, nonferrous metallurgy plants, machinebuilding plants, and power engineering stations. It can also be useful to aspirants and students in higher educational institutions.

Table of Contents

USSR

SOKOLOV, L. D. (Editor), et al., Mekhanicheskiye Svoystva Redkikh Metallov (Mechanical Properties of Rare Metals), Moscow, Izdatel'stvo Metallurgiya, 1972, 288 pp